

COMMENTS

The enclosed is responsive to the Examiner's Office Action mailed on March 24, 2004 and is being filed in pursuant to a Request For Continued Examination (RCE) as provided under 37 CFR 1.114. At the time the Office Action was mailed claims 1-6, 28, and 30-36 and 40-54 were pending. By way of the present response the Applicant has: 1) canceled claim 30; and, 2) amended claims 1, 2, 3, 28, 36, 40, 45 and 49. As such, claims 1-6, 28, 31-36 and 40-54 are currently pending. The Applicant respectfully requests reconsideration of the present application and the allowance of claims 1-6, 28, 31-36 and 40-54.

The Examiner has rejected each of independent claims 1, 28, 40, 45 and 49 as being anticipated by U.S. Patent No. 5,497,373 (hereinafter, "Hulen"). Hulen teaches the downloading of service specific algorithms to one or more DSPs. (See, Hulen Col. 3, lines 16-19 and Hulen Col. 8, line 63 through Col. 9, line 9). The Applicant has herewith amended each of independent claims 1, 28, 40, 45 and 49 to further distinguish the claimed subject matter from Hulen. In particular, the Applicant has amended each of independent claims 1, 28, 40, 45 and 49 to recite a pair of processors that are not digital signal processors (DSPs) (e.g., a general purpose processor and a communications controller). Hulen, by contrast, only teaches a single non digital signal processor (specifically, CPU 48 of Figure 2 of Hulen). Other points of distinction are explained in more detail further below.

Claim 1

With respect to claim 1, claim 1 presently recites (emphasis added):

1. (currently amended) A method for a single card to support multiple types of network service, comprising:
 initializing the card, after a reset, by executing initialization software stored in a first memory with a general purpose processor, the first memory and the first processor located on the card;
 detecting a first request to establish a first network connection that flows through the card;
 determining a first type of network service used by the first network connection;
 downloading in response to the determining, to memory located on the card, software that is specific to the first type of network service;
 executing the software to process traffic over the first network connection according to the first type of network service, the software stored in a second memory and the executing performed with a second processor, the second memory and the second processor located on the card;
 detecting a second request to establish a second network connection that flows through the card;
 determining a second type of network service used by the second network connection;
 downloading in response to the determining a second type of network service, to memory located on the card, software that is specific to the second type of network service; and
 executing the software that is specific to the second type of network service to process traffic over the second network connection according to the second type of network service, the software that is specific to the first type of network service being executed simultaneously with the software that is specific to the second type of network service so that the card can simultaneously process traffic over the first connection and the second connection according to the first and second service types, respectively, the software that is specific to the second type of network service also stored in the second memory and the executing of the software that is specific to the second type of network service also performed with the second processor, neither the first nor the second processors being digital signal processors (DSPs).

The CPU of Hulen participates in the download of network service specific software to the DSPs of Hulen. (See, Hulen Col. 3, lines 16-19 and Hulen Col. 8, line 63 through Col. 9, line 9). In order to correctly participate in the downloading of the software to the DSPs, the CPU of Hulen uses “service map” information that was previously downloaded to the CPU by a “host messaging center” 14. (See, Hulen Col. 8, lines 47 – 63). Therefore Hulen perhaps teaches the downloading of service specific software to DSPs by a processor that is not a

DSP (i.e., CPU 48); and, perhaps teaches the downloading to the processor that is not a DSP of information (the service map) that is used by the processor that is not a DSP to download the service specific software to the DSPs. But even if so, Hulen clearly does not teach: 1) the use of two processors on a card that are not DSPs; 2) the initialization of the card by one of the processors that are not DSPs; 3) the execution of network service specific software by the other of the processors that are not DSPs in such a manner that two different types of network service are simultaneously supported. As independent claim 1 recites matter directed to each of the three items listed immediately above, Hulen fails to anticipate claim 1. Therefore claim 1 is patentable over Hulen.

Claim 28

With respect to claim 28, claim 28 presently recites:

28. (currently amended) A method, comprising:
initializing a card, after a reset, by executing initialization software stored in a first memory with a first processor, the first memory and the first processor located on the card, the first processor not a digital signal processor (DSP);
downloading a first software routine to a the card so that the card can execute the first software routine, the downloading of the first software routine being in response to a connection of a first service type being attempted through the card, the first software routine being specific to the first type of networking service so that the card can provide the first type of networking service over a physical line that emanates from the card;
downloading a second software routine to the card, the downloading of the second software routine being in response to a connection of a second service type being attempted through the card, the card also able to execute the second software routine, the second software routine being specific to the second type of networking service so that the card can simultaneously provide the second type of networking service over the physical line with the first type of networking service; and,
executing the first and second software routine so as to simultaneously provide the first and second types of networking service, the executing being performed by a second processor with the first and second routines stored in a second memory, the second processor and second memory located on the card, the second processor not a digital signal processor (DSP).

As recited above with respect to claim 1, Hulen clearly does not teach: 1) the use of two processors on a card that are not DSPs; 2) the initialization of the card by one of the processors that are not DSPs; and, 3) the execution of network service specific software by the other of the processors that are not DSPs in such a manner that two different types of network service are simultaneously supported. Similar to claim 1, independent claim 28 recites matter directed to each of the three items listed immediately above. Therefore, Hulen fails to anticipate claim 28.

Claim 40

With respect to independent claim 40, independent claim 40 recites:

40. (currently amended) A card, comprising:
- a) an interface to a physical line, the interface further comprising a line interface unit and a framer;
 - b) a plurality of digital signal processors (DSPs) and a plurality of processors that are not DSPs coupled to local memory resources, at least one of said processors that are not DSPs and the portion of said local memory resources coupled to said at least one of said processors to simultaneously execute a plurality of service specific software routines that are each downloaded to said local memory resources as a consequence of connection manager software deciding the card is to simultaneously provide a plurality of different networking service types over the physical line; and,
 - c) a switch coupled to the interface to receive ingress traffic from the interface, the switch to route the traffic toward the processors.

As discussed above with respect to claim 1, Hulen clearly does not teach: 1) two processors on a card that are not DSPs; and, 2) the execution of network service specific software by at least one of the processors that are not DSPs in such a manner that two different types of network service are simultaneously supported. Independent claim 40 recites matter directed to each of the pair of items listed immediately above. Therefore, Hulen fails to anticipate claim 40.

Claim 45

With respect to independent claim 45, independent claim 45 recites:

45. (currently amended) A card, comprising:
- a) first means for interfacing to a physical line;
 - b) second means for storing a plurality of downloaded service specific software routines for at least two different types of service, said second means further comprising a first memory and a second memory;
 - c) third means for simultaneously executing said plurality of downloaded service specific software routines if the card is to simultaneously provide a plurality of different networking service types over the physical line, said third means further comprising a first processor and a second processor, said first processor coupled to said first memory, said second processor coupled to said second memory, neither of said first and second processors being digital signal processors (DSPs); and,
 - d) fourth means for receiving ingress traffic from the first means and routing the ingress traffic to the third means.

As discussed above with respect to claim 1, Hulen clearly does not teach two processors on a card that are not DSPs. Independent claim 45 recites matter directed to two processors on a card that are not DSPs. Therefore, Hulen fails to anticipate claim 45.

Claim 49

With respect to independent claim 49, independent claim 49 presently recites:

49. (currently amended) A system comprising:
- i) a card comprising:
 - a) a line interface unit coupled to a framer;
 - b) a first processor to at least run said card's boot code, said first processor not a digital signal processor (DSP);
 - c) a second processor, said second processor not a digital signal processor (DSP);
 - d) a plurality of digital signal processors (DSPs);
 - e) local memory resources coupled to said first and second processors and said plurality of DSPs, said second processor to transfer data between said plurality of DSPs and said local memory resources, said local memory resources to be downloaded into with individual software items, said individual software items being specific to a different type of networking service, said card to simultaneously execute each of said downloaded software items, said card capable of simultaneously

supporting different types of networking service over a line coupled to said line interface unit.

ii) connection management software to trigger the downloading of each software item that is downloaded in response to, for each software item that is downloaded, a realization that a connection characterized by a network service type that the software item is designed to help implement is to be supported by said card.

As discussed above with respect to claim 45, Hulen clearly does not teach two processors on a card that are not DSPs. Independent claim 49 recites matter directed to two processors on a card that are not DSPs. Therefore, Hulen fails to anticipate claim 49.

Final Comments

Because the patentability of all independent claims has been demonstrated, the Applicant respectfully submits that all claims are allowable. The Applicant's silence to the dependent claims should not be construed as an admission by the Applicant that the Applicant is complicit with the Examiner's rejection of these claims. Because the Applicant has demonstrated the patentability of the independent claims, the Applicant need not substantively address the theories of rejection applied to the dependent claims.

Applicants respectfully submit the present application is in condition for allowance. If the Examiner believes a telephone conference would expedite or assist in the allowance of the present application, the Examiner is invited to call Robert O'Rourke at (408) 720-8300.

Authorization is hereby given to charge our Deposit Account No. 02-2666 for any charges that may be due.

Respectfully submitted,

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